TEMP 2®
FLUID WARMER

OPERATORS MANUAL
6000 Series

Medical Solutions, Inc
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5640.A

TEMP 2® Fluid Warmer

Read and understand the Operators Manual before using the TEMP 2® FLUID WARMER.

Intended Use

The TEMP 2® Fluid Warmer is designed to store, warm and maintain the temperature of I.V. and irrigation fluid bags or bottles prior to their use.

It is suggested that each facility should contact the fluid manufacturer to obtain the manufacturer's specifications for time and temperature for the fluids being warmed.

Unit Description

The TEMP 2® Fluid Warmer is a mobile unit consisting of one cabinet with two internal shelves. A central temperature controller is used to control the independent heating of each shelf. The controller will display two temperatures in its display. The top display number (in red) will indicate the temperature of the top shelf heater plate. The bottom display number (in green) will indicate the temperature of the bottom shelf heater plate. During the time that the controller is directing the unit to warm, a light will illuminate in the upper left corner of the display.

The Documentor™ is designed to assist in the compliance with JCAHO® standard MM 2.20 and the fluid manufacturer's specifications for time and temperature.

JCAHO is a registered trademark of the Joint Commission on Accreditation of Healthcare Organizations

Important Labels or Directions

Model/Serial Number label

Caution: Replace fuses as marked.

Caution: Electric shock hazard, do not remove protective panel. Refer servicing to Qualified Personnel.

Caution: Verify temperature of warmed items before use.

Danger: Risk of explosion if used in the presence of flammable anesthetics.

Warning: Unit not intended for blood or blood products.

Caution: Unit may tip when exposed to a 10-degree angle

Specifications

Classification	Class 1
Dimensions	14” (wide) x 19” (deep) x 33 ¾” (tall)
Capacity	Each Shelf 12 – One Liter Bags, or 6 - Three Liter Bags, or 2 - Five Liter Bags
Design	Floor model with 2 locking casters 2 non-locking casters
Construction	Electro Galvanneal Steel

Temperature Control Specifications

Temperature Setting Range	Ambient to 120°F
Factory Preset Temperature	104°F

Ambient Operating Conditions

Storage Temperature	-40º to +80º C (-40º to +176º F)
Humidity Conditions	0 to 90% up to 40º C non-condensing
Ambient Operating Temperature	-10º to +55º C (+14 to 131º F)
Atmospheric Pressure During Transporting	Minimum of 16.288 in. Hg

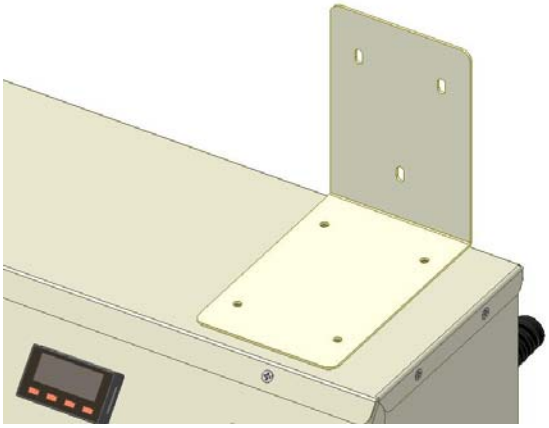
Electrical Requirements

Power Requirements	110 / 120 VAC, 60 HZ
Fusing	2 each 5 Amps Mains 2 each 3 Amps Heaters 2 each 0.5 Amps Documentor Outlet
Amperage Consumed	4 Amps
Heater Wattage	2 each 250 watt heaters
Thermal Cutout Temperature	140º F Manual Reset (plate temperature)

The TEMP 2® System has not been evaluated for compliance for Electro-magnetic compatibility (EMC).

Set-up Instructions

1. Remove the TEMP 2® from the shipping box; check before operating to ensure that all of the packaging material and manuals are removed from the cabinet.
2. Locate The Documentor™ and remove it from the shipping box. Attach The Documentor™ to the TEMP 2® following the instructions below.



3. Remove the 4 screws in the top of the TEMP 2®. Align the four holes in the TEMP 2® Time/Clock Mounting Bracket and secure using these 4 screws.
4. Remove the 3 screws in the back of The Documentor™. Attach The Documentor™ to the mounting bracket using these 3 screws.
5. Plug the Documentor™ into the Hospital Grade Receptacle located on the back of the TEMP 2®.
6. Move the TEMP 2® to the desired location, check that power switch is off and plug the power cord into an approved outlet.

Documentor™ Instructions

1) Prior to loading the cabinet with bags, use the Documentor™ to label the bags with a future date that follows the manufacturer's recommendation for the length of time a bag is to be warmed.

"Future Date Label"

To create a future date label: (See the Documentor™ Resetting Instructions for adjusting the clock date)

i) Hold the Label sheet face up.
ii) Line up the arrow on the Documentor™ under the words "Remove Fluid By:" on the label
iii) Push the label sheet towards the arrow until the Documentor™ is activated.
iv) Place a label on each IV bag for documentation and compliance purposes.

2) Load the labeled bags of solution into the TEMP 2® through the door.

Operating Instructions

1. Turn the unit on by pressing the power switch. The switch will illuminate when energized. The controller will perform a self-test then will display the current temperature of the shelf heater plates. The factory temperature setting is 104 degrees F. To change the temperature setting, follow the instructions below.
2. The controller will display 2 temperatures in its display. The top display number (in red) will indicate the temperature of the top shelf heater plate. The bottom display number (in green) will indicate the temperature of the bottom shelf heater plate. During the time that the controller is directing the unit to warm a light will illuminate in the upper left corner of the display.
3. To change the temperature setting, follow the instructions below.

TO CHANGE THE SET POINT

PRESS THE INDEX KEY (LEFT MOST KEY) TO VIEW SET POINT ONE (SP1). TOP SHELF.

PRESS THE INDEX KEY TWICE (LEFT MOST KEY) TO VIEW SET POINT TWO (SP2). BOTTOM SHELF.

PRESS THE UP OR DOWN ARROW KEYS TO CHANGE THE SET POINT.

PRESS THE ENTER KEY (RIGHT MOST KEY) TO ACCEPT NEW SET POINT.

PRESS THE INDEX KEY.

3) The shelves will operate independently from each other. When one shelf is not in use decrease the set point for that shelf (below ambient temperature) to reduce operating cost.

4) Reload the TEMP 2® after removing the bag.

NOTES:

The TEMP 2® may be left on continually without harm to the unit. **It is suggested that each facility should contact the fluid manufacturer to obtain the manufacturer's specifications for time and temperature for the fluids being warmed.**

The TEMP 2® is not intended for Blood or Blood Products.

In the event that fluid should spill inside the cabinet – unplug the unit to prevent an electrical shock hazard and refer to step #4 of the Cleaning instructions.

Documentor™ Resetting Instructions

TO CHANGE THE DATE:

1. Plug Documentor™ into an electrical outlet.
2. Press and hold blue RESET button located on the bottom of the Documentor™.
3. While holding down the RESET button, press and hold the • right button on the front panel.
4. While holding the • right button, release the RESET button.
5. When Prog appears in the display, release the • right button, Prog finishes.
6. Tap the • right button again. The display will show 0000 and the 1st digit will flash.
7. Tap the ◀ left button until the number 8 appears then Tap the • right button twice so the third 0 is flashing.
8. Tap the ◀ left button until the number 8 appears in the third position then Tap the • Right button.
9. Tap the ◀ left button until the number 8 appears in the fourth position. The display should read 8088 then Tap the • right button.
10. When the display flashes all four digits, Tap the • right button
11. The display flashes P1(date).
12. Tap the • right button, the small digits on the left, representing the year, will flash.
13. Tap the ◀ left button until the desired number appears then Tap the • right button. The digits representing the month should flash.
14. Tap the ◀ left button until the desired number appears then Tap the • right button. The digits representing the day should flash.
15. Tap the ◀ left button until the desired number appears then Tap the • right button.
16. When the desired date is set Tap the • right button until the display flashes P1 (date).
17. Tap the blue RESET to return to the standard display.

TO CHANGE THE TIME:

18. Follow steps 1-11.
19. Tap the ◀ left button, when the display flashes P2 cloc, Tap the • right button.
20. The hour format will flash (12 or 24). If necessary, tap the ◀ left button until 24 flashes. Tap the • right button
21. The hour digits will flash; Tap the ◀ left button until the desired setting is achieved. (the hour must be set in military time 3:05 pm = 15:05) Tap the • right button
22. The minutes digits will flash; Tap the ◀ left button until the desired setting is achieved. Tap the • right button twice.
23. The display will flash P2 Cloc, Press and release the blue RESET button.

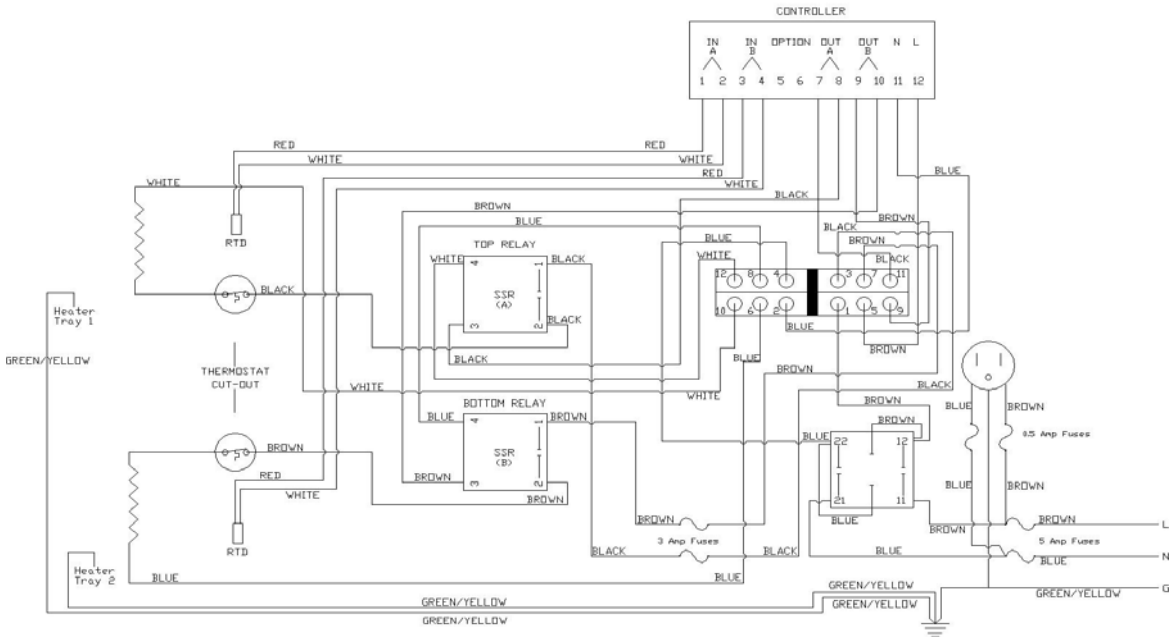
Cleaning Instructions

1. Turn the TEMP 2® off and disconnect it from the power source.
2. Wipe down the cabinet with a damp cloth using a general hospital cleaner (i.e. Isopropyl Alcohol) as needed, following the manufacturers instructions for the cleaner.
3. Avoid contact with the electrical connections and the electrical components.
4. In the event that excessive fluids enter the cabinet, disconnect power to the unit and refer to qualified service personnel. Remove the service panel (qualified person) and remove any liquid and/or dry components. Perform any necessary hospital electrical safety checks before returning the TEMP 2® to service.

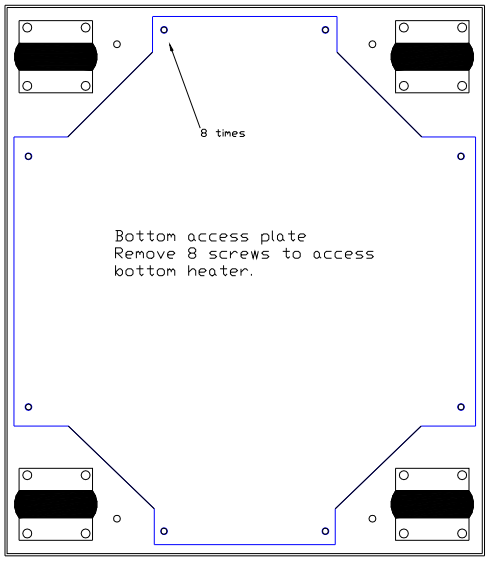
Trouble Shooting

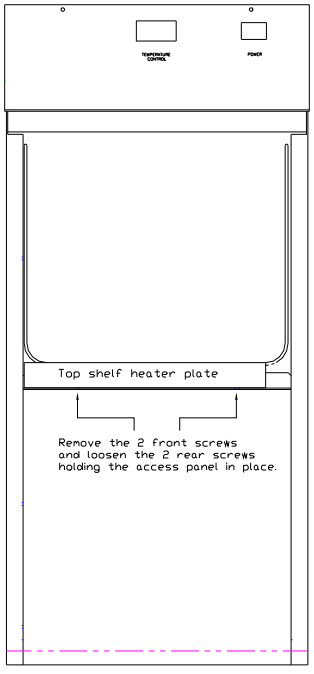
1. If the unit fails to warm, check the following:
    a. Check to see that the TEMP 2® is plugged in and the power switch is on.
    b. Check the set point setting so that the controller is calling for the unit to operate.
2. If the unit overheats, call Medical Solutions, Inc.
3. Contact Medical Solutions, Inc. for technical assistance at 800-435-7600.

Electrical Schematic



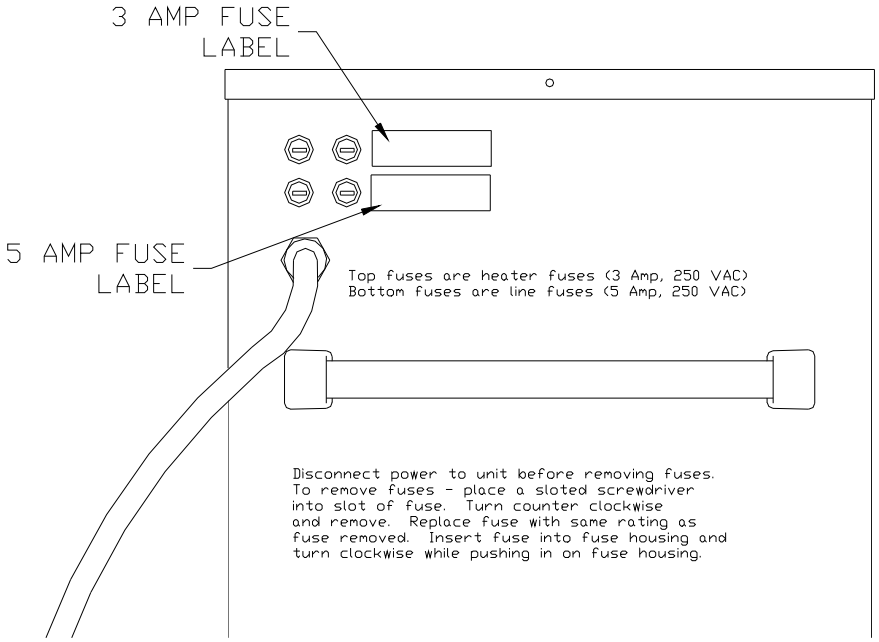
Service Panel Location and Removal
Remove the top plate to access the electrical compartment.





Front view of cabinet without door

Fuse removal instructions



Preventive Maintenance Plan

The TEMP 2® temperature controller should be verified every five (5) years. Medical Solutions, Inc. requires the use of the following items to accurately measure the bag temperature for verification.

Fluke 51II Digital Thermometer

6" Long .093" Diameter Type T Needle Thermocouple

(with the Thermocouple calibrated to the Thermometer)

With the outer wrap still on a three liter IV fluid bag, pierce the bag through the needle injection port on the bag with an 18ga needle to make it easier to insert the Thermocouple. Insert the Thermocouple through the pierced needle injection port. Place the fluid bag onto the center of the bottom shelf. Load the top shelf with an additional three liter IV fluid bag. Feed the Thermocouple wire attached to the Fluke Thermometer out of the cabinet positioning the probe in the center of the bag. Close the door.

Turn the power on to the TEMP 2®. Adjust the temperature controller set point temperature to 104°F for both shelves. Allow the unit to operate for a minimum of 6 hours before verifying the temperatures. After the allotted time, compare the temperature reading on the controller to the temperature reading on the Fluke Thermometer, the two temperatures should be within two degrees Fahrenheit of each other. If the two temperature readings are within two degrees Fahrenheit of each other, the temperature controller has been verified. If they are not, please contact Medical Solutions, Inc. at 800-435-7600.

Repeat the calibration process for the top shelf of the TEMP 2®.

If a Fluke Digital Thermometer is not available an alternative method to verify the controller is to use a glass laboratory thermometer. Place 1 three liter IV bag onto the center of each of the shelves. Turn the power on and adjust the temperature controller set point temperature to 104°F for both shelves. Allow the unit to operate for a minimum of 6 hours before verifying the temperatures. Remove the bag and place the end of the glass thermometer on the top and in the middle of the bag. Fold the bag over the thermometer and hold for approximately two minutes or until the mercury stops moving. If the reading on the thermometer is between 100.4°F and 105.8°F the temperature controller has been verified. If they are not, please contact Medical Solutions, Inc. at 800-435-7600.

Repeat the calibration process for the other shelf of the TEMP 2®.

LIMITED WARRANTY

For one year from the date of shipment to the Buyer (the "Warranty Period"), MSI warrants that the Equipment provided to the Buyer shall be free from defects in workmanship and material. In the event of a breach of this warranty during the Warranty Period, MSI shall, at its option, repair or replace the Equipment, and Buyer's remedies are limited to such repair or replacement. MSI DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL MSI BE LIABLE FOR DIRECT, INDIRECT, PUNITIVE, ECONOMIC, CONSEQUENTIAL OR OTHER DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS.

To enable MSI to administer the Warranty properly, Buyer shall (1) register the Warranty using the form provided below, and (2) promptly notify MSI of any claim hereunder. As a condition to the Warranty, Buyer shall use and maintain the Equipment according to the provisions of the Operator's service manual.

IMPORTANT: THIS IS YOUR TEMP 2® WARRANTY REGISTRATION

Please register your warranty by filling out this page and send it to Medical Solutions, Inc. within 30 days of purchase.

A. Hospital Name: _____

B. Mailing Address: _____

C. City: _____ State: _____ Zip Code: _____

D. Contact Name: _____

E. Date Purchased: _____

F. Serial Number: _____

G. Department Purchased For: _____

COPY THIS PAGE AND MAIL TO:

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